



**Info Session on the new Imbalance
Price calculation and the publications
impact of MARI, iCAROS & PICASSO**

20/03/2024

Agenda

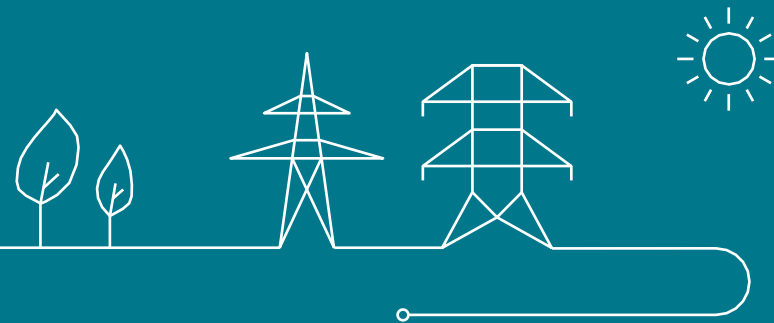
1. Imbalance price calculation
2. MARI & PICASSO publication changes
 - Elia.be, OpenData & B2B XML Services
 - ETP
3. iCAROS publication changes

Disclaimer :

The rules for the imbalance price calculation are described in the T&C BRP which are currently being evaluated by CREG. A decision, and hopefully an approval of the rules is expected by 28/03. The content of this presentation is therefore subject to CREG's approval of the T&C BRP.

Imbalance price calculation

Caroline BOSSCHAERTS



General principles

Imbalance Tariff is calculated for each quarter-hour and is equal to : main component \pm additional component(s)

		System Imbalance	
		Positive	Negative or zero
Imbalance of the balance responsible party	Positive Elia \rightarrow BRP*	MDP $- \alpha$	MIP $+ \alpha$
	Negative BRP \rightarrow Elia*		

* Financial flow if imbalance tariff is positive.

Where:

Focus of today's meeting

- The **main component** is called MIP/MDP, depending on the direction of the System Imbalance.

- The **additional component** is called the “alpha component” and is added to or removed from the main component, depending on the direction of the System Imbalance.

No change to α calculation

- The **System Imbalance** (or SI) is calculated for each quarter-hour and represents the difference between the ACE of the Belgian area and the Frequency Restoration Reserves activated to cover Belgian demands.



Proposed evolutions compatible with MARI/PICASSO

- $MIP = \max (\text{floor} , \text{aFRR component} , \text{mFRR component})$ if $SI(QH) < - 25 \text{ MW}$
- $MDP = \min (\text{cap} , \text{aFRR component} , \text{mFRR component})$ if $SI(QH) > 25 \text{ MW}$
- $IP = MIP/MDP = \text{deadband value}$ if $-25 \text{ MW} \leq SI(QH) \leq 25 \text{ MW}$

- IP formula should not incentivize to aggravate the local SI => **CAP & FLOOR** with
 - floor = $\max(\text{VoAA up}, \text{VoAA down})$
 - cap = $\min(\text{VoAA down}, \text{VoAA up})$

- ✓ aFRR component evolves to take all the OCs into account and to reflect PAC: $\text{aFRR component} = \frac{\sum_{oc} [(abs(aFRR SD_{oc,j})) \times CBMP_{oc,j}]}{\sum_{oc} (abs(aFRR SD_{oc,j}))}$

- ✓ mFRR component reflects the marginal value of mFRR

Proposal: max (res. Min) CBMP of mFRR satisfied demand in the relevant direction during the ISP

mFRR component for MIP = $\max(CBMP_{SA}, CBMP_{upward DA \text{ in previous ISP}}, CBMP_{upward DA \text{ in current ISP}})$

mFRR component for MDP = $\min(CBMP_{SA}, CBMP_{downward DA \text{ in previous ISP}}, CBMP_{downward DA \text{ in current ISP}})$

- ✓ IP formula should provide a neutral price signal in case BE is close to balance ($|SI| \leq 25 \text{ MW}$) => **dead band = (CAP+FLOOR)/2**

Market data – assumptions used for numerical cases

- $VoAA_{down} = 5\text{€/MWh}$
- $VoAA_{up} = 90\text{€/MWh}$
- $CBMP_{SA} = 155\text{€/MWh}$
- $CBMP_{DA, up, current\ ISP} = 382\text{€/MWh}$
- $CBMP_{DA, up, previous\ ISP} = 171\text{€/MWh}$
- $CBMP_{DA, down, current\ ISP} = -163\text{€/MWh}$
- $CBMP_{DA, down, previous\ ISP} = -65\text{€/MWh}$

mFRR

aFRR

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
$CBMP^*_{aFRR}$	90	95	500	500	95	95	95	90	90	-58	-374	-563	-58	-58	-58

* For the sake of simplicity, we consider aFRR optimization cycles of 1 minute instead of 4 seconds



Example 1 – SI is within the dead band range

- SI = -25MW
- 40MW of mFRR have been activated in DA in the upward direction during previous QH
- aFRR SD has evolved in the following way over the ongoing QH:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
SD* _{aFRR}	25	25	22	20	10	10	5	-5	-5	-7	-20	-20	-17	-15	-15

* For the sake of simplicity, we consider aFRR optimization cycles of 1 minute instead of 4 seconds

$$\text{Imbalance price} = \text{MIP} = \text{dead band value} = (\text{VoAA}_{\text{down}} + \text{VoAA}_{\text{up}}) / 2 = 47,5\text{€}/\text{MWh}$$

The mFRR activation in previous QH and the aFRR component do not come into play since the Imbalance Price is set by the dead band.



Example 2 – no mFRR activation, IP set by aFRR component

- SI = -26MW
- No mFRR activation in SA or DA (neither in the ongoing, nor in the previous quarter-hour)
- aFRR SD has evolved in the following way over the ongoing QH:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
SD^*_{aFRR}	35	35	42	30	20	20	5	5	5	7	5	5	7	5	5

* For the sake of simplicity, we consider aFRR optimization cycles of 1 minute instead of 4 seconds

Imbalance price = MIP = max (floor, aFRR component, mFRR component)

mFRR component does not exist for this QH

$$\text{aFRR component} = \frac{\sum_{oc} [(abs(aFRR SD_{oc,j})) \times CBMP_{oc,j}]}{\sum_{oc} (abs(aFRR SD_{oc,j}))} = 179,97\text{€/MWh}$$

$$\text{Floor} = \max (VoAA_{down}, VoAA_{up}) = 90\text{€/MWh}$$

$$\text{Imbalance price} = 179,97\text{€/MWh}$$

Example 3 – no mFRR activation, IP set by the floor

- SI = -26MW
- No mFRR activation in SA or DA (neither in the ongoing, nor in the previous quarter-hour)
- aFRR SD has evolved in the following way over the ongoing QH:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
SD^*_{aFRR}	5	5	7	5	5	20	5	5	5	7	35	35	42	30	20

* For the sake of simplicity, we consider aFRR optimization cycles of 1 minute instead of 4 seconds

Imbalance price = MIP = max (floor, aFRR component, mFRR component)

mFRR component does not exist for this QH

$$aFRR \text{ component} = \frac{\sum_{oc} [(abs(aFRR SD_{oc,j})) \times CBMP_{oc,j}]}{\sum_{oc} (abs(aFRR SD_{oc,j}))} = -120,62\text{€/MWh}$$

$$\text{Floor} = \max (VoAA_{down}, VoAA_{up}) = 90\text{€/MWh}$$

Imbalance price = 90€/MWh

Example 4 – mFRR activation in SA, IP set by mFRR

- SI = -80MW
- 50 MW of mFRR activated in SA
- aFRR SD has evolved in the following way over the ongoing QH:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
SD_{aFRR}^*	50	45	40	35	30	30	30	30	30	30	35	40	45	50	55

* For the sake of simplicity, we consider aFRR optimization cycles of 1 minute instead of 4 seconds

Imbalance price = MIP = max (floor, aFRR component, mFRR component)

– mFRR component = $CBMP_{SA} = 155\text{€/MWh}$

– aFRR component = $\frac{\sum_{oc} [(abs(aFRR SD_{oc,j})) \times CBMP_{oc,j}]}{\sum_{oc} (abs(aFRR SD_{oc,j}))} = 24,65\text{€/MWh}$

– Floor = max ($VoAA_{downn}$, $VoAA_{up}$) = 90€/MWh

– Imbalance price = 155€/MWh

Example 5 – mFRR activation in SA and DA, IP set by mFRR SA

- SI = -80MW
- -20MW of mFRR activated in DA during previous QH, +70 MW of mFRR activated in SA
- aFRR SD has evolved in the following way over the ongoing QH:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
SD^*_{aFRR}	50	45	40	35	30	30	30	30	30	30	35	40	45	50	55

* For the sake of simplicity, we consider aFRR optimization cycles of 1 minute instead of 4 seconds

Imbalance price = MIP = max (floor, aFRR component, mFRR component)

- mFRR component = $CBMP_{SA} = 155\text{€/MWh}$ ($CBMP_{DA, \text{down}, \text{previous ISP}}$ is not taken into account in the calculation of the mFRR component of the MIP)

- aFRR component =
$$\frac{\sum_{oc} [(abs(aFRR SD_{oc,j})) \times CBMP_{oc,j}]}{\sum_{oc} (abs(aFRR SD_{oc,j}))} = 24,65\text{€/MWh}$$

- Floor = max ($VoAA_{down}$, $VoAA_{up}$) = 90€/MWh

- Imbalance price = 155€/MWh

Example 6 – mFRR activation in SA and DA , IP set by mFRR DA

- SI = 80MW
- -30MW of mFRR activated in DA during previous QH, -50MW of mFRR activated in SA
- aFRR SD has evolved in the following way over the ongoing QH:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
SD^*_{aFRR}	-25	-20	-15	-10	-5	0	0	0	0	-10	-20	-25	-30	-35	-40

* For the sake of simplicity, we consider aFRR optimization cycles of 1 minute instead of 4 seconds

Imbalance price = MDP = min (cap, aFRR component, mFRR component)

mFRR component = min ($CBMP_{DA, down, previous\ ISP}$, $CBMP_{SA}$) = -65€/MWh

aFRR component = $\frac{\sum oc [(abs(aFRR\ SD\ oc, j)) \times CBMP\ oc, j]}{\sum oc (abs(aFRR\ SD\ oc, j))}$ = -47,23€/MWh

Cap = min ($VoAA_{down}$, $VoAA_{up}$) = 5€/MWh

Imbalance price = -65 €/MWh

Example 7 – mFRR activation in SA, IP set by cap

- SI = 80MW
- -80MW of mFRR activated in SA
- aFRR SD has evolved in the following way over the ongoing QH:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
SD^*_{aFRR}	-80	-75	-70	-68	-50	-20	-7	0	-2	0	0	-2	-10	-15	-20

* For the sake of simplicity, we consider aFRR optimization cycles of 1 minute instead of 4 seconds

Imbalance price = MDP = min (cap, aFRR component, mFRR component)

mFRR component = CBMP SA = 155 €/MWh

aFRR component = $\frac{\sum oc [(abs(aFRR SD oc, j)) x CBMP oc, j]}{\sum oc (abs(aFRR SD oc, j))} = 207,84€/MWh$

Cap = min (VoAA_{downn} , VoAA_{up}) = 5€/MWh

Imbalance price = 5 €/MWh

Example 8 – mFRR activation for RTE (via Reserve Sharing), IP set by aFRR

- SI = -26MW
- 50MW of mFRR activated in SA to cover a demand of RTE (via Reserve Sharing)
- aFRR SD has evolved in the following way over the ongoing QH:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
SD* _{aFRR}	35	35	30	20	20	20	5	5	5	7	5	5	7	5	5

* For the sake of simplicity, we consider aFRR optimization cycles of 1 minute instead of 4 seconds

Imbalance price = MIP = max (floor, aFRR component, mFRR component)

mFRR component does not exist for this QH since the BE mFRR SD is equal to 0

$$\text{aFRR component} = \frac{\sum_{oc} [(abs(aFRR SD_{oc,j})) \times CBMP_{oc,j}]}{\sum_{oc} (abs(aFRR SD_{oc,j}))} = 146,3\text{€/MWh}$$

Floor = max (VoAA_{downn}, VoAA_{up}) = 90€/MWh

Imbalance price = 146,3€/MWh

Example 9 – Disconnection from EU balancing platforms

- SI = -26MW
- 50MW of mFRR activated locally at a Local Marginal Price of 117,76€/MWh
- aFRR SD and aFRR Local Marginal Prices have evolved in the following way over the ongoing QH:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
SD* _{aFRR}	35	35	30	20	20	20	5	5	5	7	5	5	7	5	5
LMP* _{aFRR}	95	95	95	95	95	95	92,02	92,02	92,02	95	92,02	92,02	95	92,02	92,02

* For the sake of simplicity, we consider aFRR optimization cycles of 1 minute instead of 4 seconds

Imbalance price = MIP = max (floor, aFRR component, mFRR component)

mFRR component = LMP = 117,76€/MWh

aFRR component =
$$\frac{\sum_{ts \in ISP} (abs(Global CT_{ts}) * MP_{aFRR_{ts}})}{\sum_{ts \in ISP} (abs(Global CT_{ts}))} = 94,5€/MWh$$

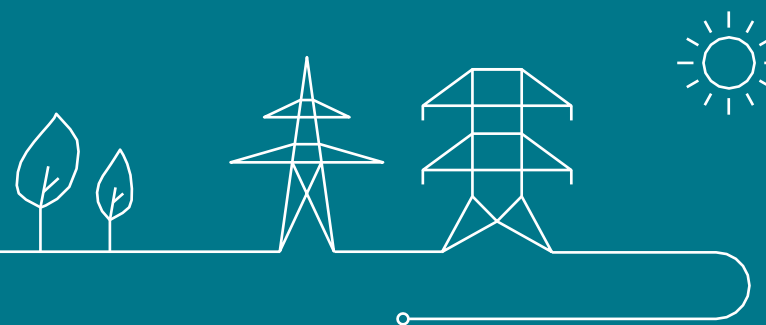
Floor = max (VoAA_{downn}, VoAA_{up}) = 90€/MWh

Imbalance price = 117,76€/MWh



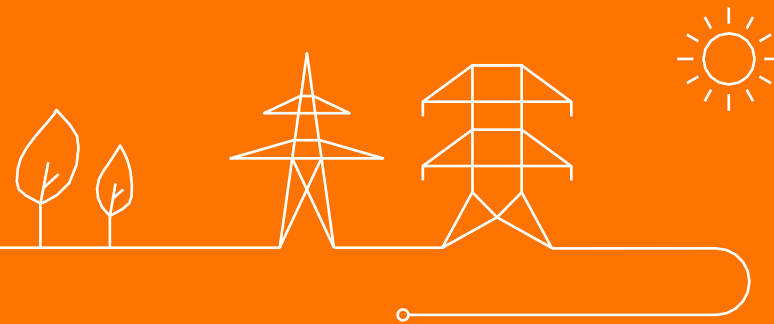
15-minute break

MARI & PICASSO Publication Changes



Publications on elia.be, OpenData & B2B XML Services

Stijn PINKHOF



Overview of mainly impacted balancing publications



Elia publishes information about imbalance prices, system imbalance and imbalance price components in near-real time.

Current system imbalance

Imbalance prices (1 minute)

Imbalance prices (15 minutes)

Balancing energy volume and price components (1 and 15 minutes)

System imbalance forecasts



Elia publishes information about the balancing energy bids offered by Balancing Service Providers and the corresponding activations in near-real time.

Day-ahead Imbalances

Available volumes and prices in Belgium

Balancing energy volume activated in Belgium (15 minutes)

3 Impacted Platforms

[Elia.be](https://www.elia.be)

OpenDataElia 

[B2B XML Services](#)
(GridData & publications.elia.be URLs)

Changed

NEW

NEW

Removed

Bidding price per volume level

“Activated volumes and prices publication” is replaced by “Balancing energy volume and price components”

Overview

- Overview of mainly impacted publications
- Changes are presented for Elia.be
 - [OpenData & B2B XML Services \(GridData\)](#) are not treated separately but have the same changes
- An overview of all the changes and more details will be provided on 29/03/2024 at the latest
- Test datasets on OpenData will also be made available



OpenDataElia principles

1. Datasets are aligned with Elia.be
2. Changed 1-minute datasets will have a new ID and URL (current ones will stop working)
3. Historical datasets will be split in pre technical go live and post Go Live*
4. Test datasets will be made available on OpenData
 1. At the latest 29/03/2024
 2. ID & URL will be kept at Go-Live

*Example:

Current System Imbalance 1' Historical (before 22/05/2024) → new name for current historical 1 min dataset

Current System Imbalance 1' Historical (after 22/05/2024) → NEW (URL & ID)

Current System Imbalance 1' (Near real Time) → This dataset will have a different URL & ID than the current dataset



B2B XML Services (GridData) principles

1. Datasets are aligned with Elia.be
2. Will be phased out in favor of OpenData (no fixed timing for now)
3. <https://griddata.elia.be/> publications will remain accessible, for now, but we recommend using OpenData
 - No long-term support can be guaranteed for GridData URL's
4. URLs with <https://publications.elia.be/> on B2B XML will stop working from technical go live
 - All URLs will be replaced by <https://griddata.elia.be/> URLs
5. Structure of XML data of some publications will change
 - Not the focus of today's presentation
6. Overview of all changes + explanations will be provided via separate document

Accessing the XML web services

Links to the B2B XML web services are provided below.

[System imbalance per minute data](#)

[Imbalance price data](#)

[Infeed data](#)

[Available regulation capacity data: volume per product](#)

[Used Regulation Capacity: volumes and prices per product](#)

[Available regulation capacity data: marginal price per volume level](#)

[Available regulation capacity data: marginal price per product](#)

[Used regulation capacity volumes - 1 minute basis](#)

[Used regulation capacity prices - 1 minute basis](#)

[Imbalance prices - 1 minute basis](#)

[Wind forecast data](#)

[Solar forecast data](#)



Timing & Data quality principles

Timing

1 min publications are cumulative*

The minute at the end of which the calculation has been performed e.g. “11:49”, includes all events which occurred between the start of the QH, 11:45:00.00 (hh:mm:ss) until 11:49:59.99 in the calculation of that minute.

*Except for the current system imbalance publication.

The 1-minute values published here do not concern the previous minutes of the quarter hour, only the minute itself.

Data Quality

Publications with a quality status by default have non validated data

- Quality Status: **Data Issue** means that one or more errors happened during calculation of the concerned minute or quarter hour
- A monthly process is performed to validate the data
- 1 min data is never validated

*This presentation is no reference for calculations. Please refer to the T&Cs and/or presentation on the calculation of the imbalance Price



1. Current System Imbalance (1 min)

Current Publication

Time	SI (MW)	N2V (MW)	Strategic Reserves (MW)	Upward regulation volume							Downward regulation volume							
				GLV (MW)	aFRR		mFRR			Inter-TSO Import (MW)	GLV (MW)	aFRR		mFRR		Inter-TSO Export (MW)		
					IGCC+ (MW)	R2+ (MW)	Bids+ (MW)	R3Std (MW)	R3Flex (MW)	ICH+ (MW)			IGCC- (MW)	R2- (MW)	Bids- (MW)			

Future Publication - from local go-live (MARI)

SI (MW)	ACE (MW)	Positive (upward) balancing volume					Negative (downward) balancing volume										
		aFRR		mFRR			aFRR		mFRR								
		IGCC+ (MW)	aFRR+ (MW)	mFRR SA+ (MW)	mFRR DA+ (MW)	Reserve Sharing + (MW)	IGCC- (MW)	aFRR- (MW)	mFRR SA- (MW)	mFRR DA- (MW)	Reserve Sharing - (MW)						



1. Current System Imbalance (1 min)

Future Publication - from local go-live MARI

SI (MW)	ACE (MW)	Positive (upward) balancing volume					Negative (downward) balancing volume					
		aFRR		mFRR			aFRR		mFRR			
		IGCC+	aFRR+	mFRR SA+	mFRR DA+	Reserve Sharing +	IGCC-	aFRR-	mFRR SA-	mFRR DA-	Reserve Sharing -	
		(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)

→ These values are only related to the considered minute itself (not cumulative)

- **SI:** system imbalance
- **ACE:** area control error (=FRCE = Frequency Restoration Control Error)
- **IGCC:** remains unchanged: aFRR volumes netted through imbalance netting platform
- **aFRR:**
 - Before Picasso = sum aFRR Requested signals sent to BSPs
 - After PICASSO = aFRR satisfied demand (excluding IGCC)
 - Disconnected from PICASSO = global control target
- **mFRR SA & DA:** If connected to MARI = mFRR satisfied demand
If not (yet) connected to MARI = requested volume in BE
No more mFRR Flex
- **mFRR Reserve sharing:** activated volumes (up or down) with other TSOs to cover Elia's imbalances



1. Current System Imbalance (1 min) – Graphs on the webpage

Situation at **19/04/2023 15:46**

Net Regulation Volume = -20,7 MW

Evolution of the average NRV during the current quarter hour = -23,3 MW

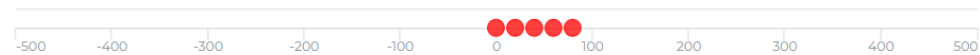
System Imbalance = 81,4 MW

Evolution of the average SI during the current quarter hour = 54,5 MW

Net Regulation Volume



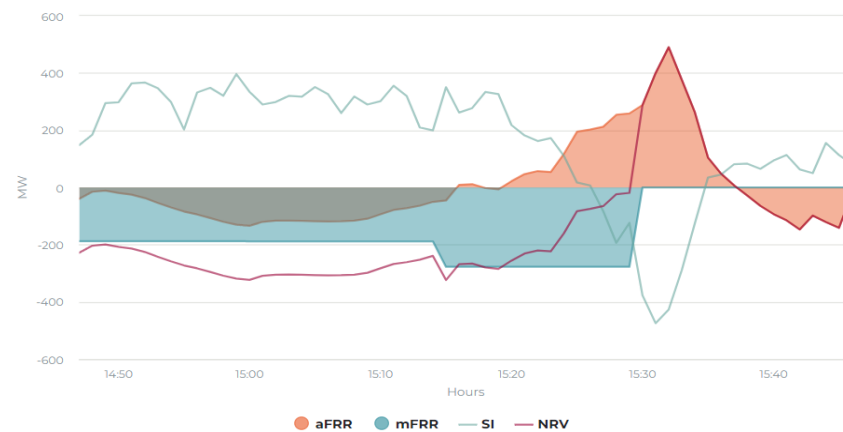
System Imbalance



Elia_Open_Data_License

All the values published here are unapproved values. They should therefore be used for **indicative purposes only**.

Evolution of System Imbalance and Net Regulation Volume



→ Replace NRV by ACE (gives indication if SI is under control)

-
- Replace NRV by ACE (gives indication if SI is under control)
 - aFRR line = aFRR satisfied demand + IGCC
 - mFRR line = mFRR satisfied demand + Reserve sharing



2. Imbalance price publications (1 & 15 min)

Future Publication - from local go-live

ACE

Quarter	Quality status	NRV (MW)	SI (MW)	α (€/MWh)	MIP (€/MWh)	MDP (€/MWh)	SR (€/MWh)	SI < -1.0 (MW)	Price (€/MWh)
08:15 > 08:30	Non validated	103,325	-127,938	0,00	300,00	70,00			300,00
08:00 > 08:15	Non validated	193,110	-193,300	9,86	406,08	70,00			415,94
07:45 > 08:00	Non validated	326,180	-321,970	9,25	393,06	70,00			402,31
07:30 > 07:45	Non validated	164,100	-184,611	1,11	393,06	70,00			394,17
07:15 > 07:30	Non validated	40,257	-40,550	0,00	393,06	70,00			393,06

- The calculation of all the columns is changing (except α)
- See imbalance price presentation for more explanations



3. Balancing energy volume and price components (1 and 15 min)

Price components **NEW**

Current publication

SI (MW)	NPP (MW)	Strategic Reserve	Incremental Prices						Decremental Prices					
		SR (€/MWh)	MIP (€/MWh)	IGCC+	R2+	Bids+	R3 Std	R3 Flex	Inter-TSO Import	MDP (€/MWh)	IGCC-	R2-	Bids-	Inter-TSO Export

Future publication (from local go-live)

SI (MW)	ACE (MW)	Incremental prices				Decremental prices			
		MIP (€/MWh)	Floor (€/MWh)	aFRR+ (€/MWh)	mFRR+ (€/MWh)	MDP (€/MWh)	Cap (€/MWh)	aFRR- (€/MWh)	mFRR- (€/MWh)

- **SI and ACE:** same as in current system imbalance but cumulative
- **MIP:** max(floor; aFRR component; mFRR component)
- **Floor:** max(VoAA_aFRR,up; VoAA_aFRR,down; VoAA_mFRR,up; VoAA_mFRR,down)
- **aFRR+:** volume weighted average of CBMP with aFRR+ SD as weighting factor for upwards activations
- **mFRR+:** max(CBMP_SA+,currentQH; CBMP_DA+,currentQH; CBMP_DA+,previousQH)
- **MDP:** min(cap; aFRR component; mFRR component)
- **Cap:** min(VoAA_aFRR,up; VoAA_aFRR,down; VoAA_mFRR,up; VoAA_mFRR,down)
- **aFRR-:** volume weighted average of CBMP with aFRR- SD as weighting factor for downwards activations
- **mFRR-:** min(CBMP_SA-,currentQH; CBMP_DA-,currentQH; CBMP_DA-,previousQH)

Example is for 15 min and when we are connected to the balancing platforms. For detailed explanations of calculations see T&C separate doc. on publications

3. Balancing energy volume and price components (1 and 15 min)

Energy components **NEW**

Current publication « Activated volumes and prices »

		Upward regulation volume							Downward regulation volume					
SI	NRV	SP	GUV	IGCC+	R2+	Bids+	R3 Std	R3Flex	Inter-TSO Import	GDV	IGCC-	R2-	Bids-	Inter-TSO export

Future publication - from local go-live

SI (MW)	ACE (MW)	Positive (upward) balancing volume					Negative (downward) balancing volume							
		aFRR		mFRR			aFRR		mFRR					
		IGCC+	aFRR+	mFRR SA+	mFRR DA+	Reserve Sharing +	IGCC-	aFRR-	mFRR SA-	mFRR DA-	Reserve Sharing -			
		(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)



3. Balancing energy volume and price components (1 and 15 min)

Energy components NEW

Future publication - from local go-live

SI (MW)	ACE (MW)	Positive (upward) balancing volume					Negative (downward) balancing volume					
		aFRR		mFRR			aFRR		mFRR			
		IGCC+	aFRR+	mFRR SA+	mFRR DA+	Reserve Sharing +	IGCC-	aFRR-	mFRR SA-	mFRR DA-	Reserve Sharing -	
		(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)

1 min publication

- The same components as in publication '*current system imbalance*' but **cumulative values**
 - SI, ACE, IGCC, aFRR** will be running average over the QH
 - mFRR SA & DA:** sum of satisfied demand
 - Reserve sharing:** sum of all reserve sharing activations

15 min publication

- Same as 1 min publication, except that:
 - ACE 1 min is based on average instantaneous telemeasured data vs the 15 min ACE using the metered values (MWh counter)
 - Should normally be in line with each other but deviations are possible



4. Activated volumes in Belgium (15 min) **NEW**

Positive (upward) balancing volume			Negative (downward) balancing volume		
aFRR+ (MW)	mFRR		aFRR- (MW)	mFRR	
	mFRR SA+ (MW)	mFRR DA+ (MW)		mFRR DA- (MW)	mFRR SA- (MW)

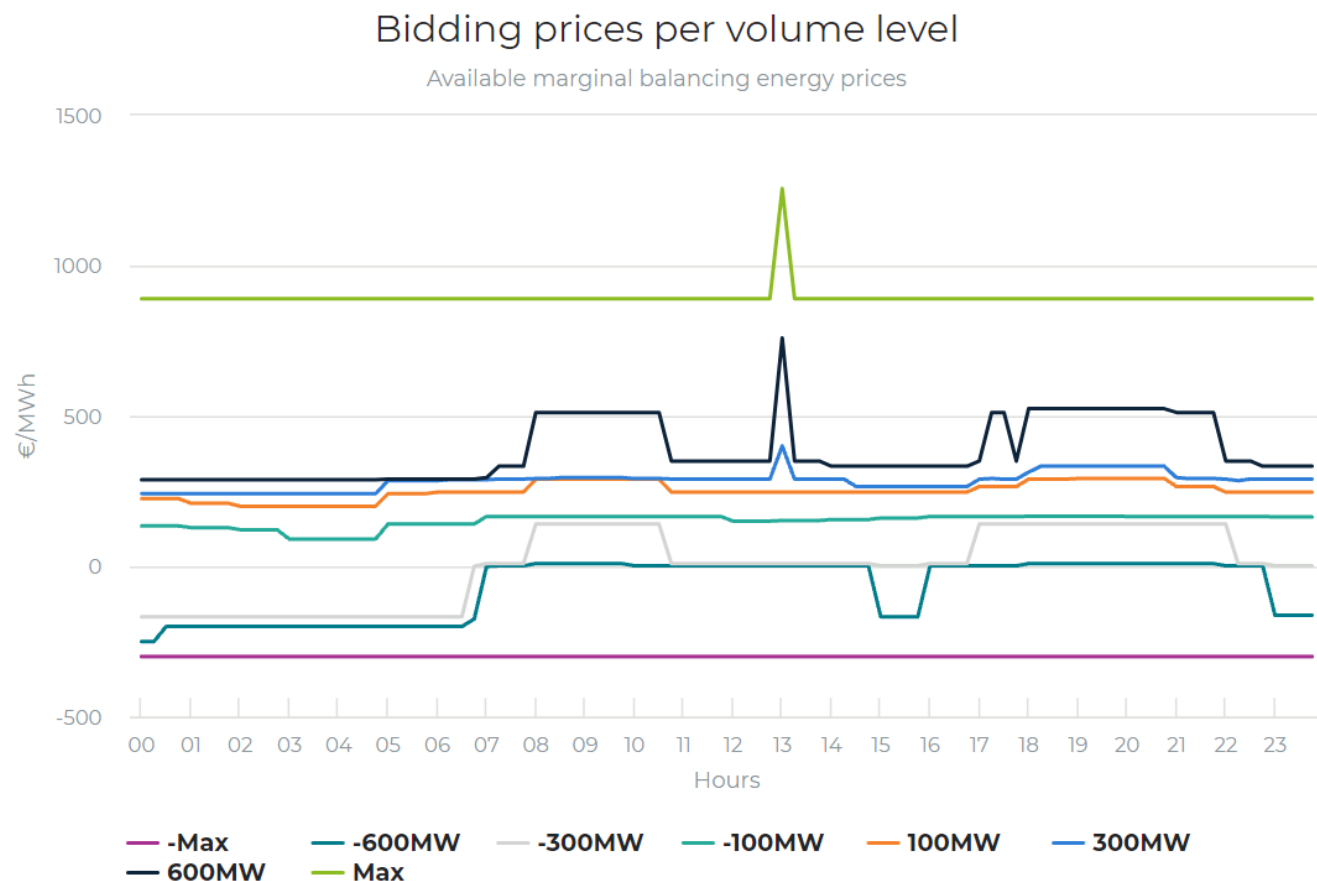
Publication includes activations for other TSOs in Belgium

- **aFRR+**: sum aFRR Requested signals sent to BSPs for upward activation in BE
- **mFRR SA+**: scheduled upward activated mFRR volume in BE (includes Reserve Sharing activations in BE for other TSOs)
- **mFRR DA+**: direct upward activated mFRR volume in BE (includes Reserve Sharing activations in BE for other TSOs)
- **aFRR-**: sum aFRR Requested signals sent to BSPs for downward activation in BE
- **mFRR DA-**: direct downward activated mFRR volume in BE.
- **mFRR SA-**: scheduled downward activated mFRR volume in BE

aFRR volumes will only be included as of Picasso – before that the aFRR volume energy components publication corresponds to the volumes activated in Belgium



5. Bidding Price by volume level – Elia.be



Elia publishes marginal prices for each volume level of the available balancing energy. The goal of this publication is to estimate the imbalance price in function of the volume activated to balance the Belgian zone.

With the European platforms, the imbalance price does not only depend on the Belgian balancing need and the bids available in Belgium, but also on the bids & needs of other countries



Elia will **delete** this publication, as it would provide misleading information



6. Available volumes & prices in Belgium – Elia.be **NEW**

Current publication

Quarter	Marginal prices (€/MWh) for activation of											
	inter-TSO Export* [€/MWh]	D L [€/MWh]	D C Energy Limited [€/MWh]	D C [€/MWh]	R2- [€/MWh]	R2+ [€/MWh]	I C [€/MWh]	I C Energy Limited [€/MWh]	R3Std [€/MWh]	R3Flex [€/MWh]	I LC [€/MWh]	inter-TSO Import* [€/MWh]
00:00 > 00:15	-210,77	-300,00	0,00	-25,10	-230,75	197,21	909,62	1.000,00	2.378,48	800,00		498,00
00:15 > 00:30	-210,77	-300,00	0,00	-25,10	-234,18	163,22	909,62	1.000,00	2.065,98	800,00		498,00

Future publication (from local go-live)

Marginal prices (€/MWh) for activation of						
Quarter	Reserve Sharing- [€/MWh]	mFRR- [€/MWh]	aFRR- [€/MWh]	aFRR+ [€/MWh]	mFRR+ [€/MWh]	Reserve Sharing+ [€/MWh]

The available volumes and prices published are based on energy bids **in BE** and are only a representation of the Local Merit Order.

- **mFRR**: marginal price
- **aFRR**:
 - Pre-Picasso: weighted average price
 - Post-Picasso: marginal price



7. Capacity Auction Results – Elia.be

Tertiary Reserve – Daily Procurement

From

To

27/11/2023 

27/11/2023 

Tendering Period	CCTU	mFRR Product Type	Total Awarded Volume (MW)	Average Price (€/Mw/h)	Marginal Price (€/Mw/h)	Total Offered Volume	Individual Capacity Bids
26/11/2023	27/11/2023 00:00 - 04:00	mFRR Flex	2	6.75	6.75	2	
26/11/2023	27/11/2023 04:00 - 08:00	mFRR Standard	673	9.99	10.61	1045	
26/11/2023	27/11/2023 00:00 - 04:00	mFRR Total	675	6.81	7.37	1055	Individual bids
26/11/2023	27/11/2023 04:00 - 08:00	mFRR Flex	2	10.45	10.45	2	
26/11/2023	27/11/2023 04:00 - 08:00	mFRR Standard	673	9.99	10.61	1045	
26/11/2023	27/11/2023 04:00 - 08:00	mFRR Total	675	10	10.61	1047	Individual bids
26/11/2023	27/11/2023 08:00 - 12:00	mFRR Flex	2	11.7	11.7	2	
26/11/2023	27/11/2023 08:00 - 12:00	mFRR Standard	673	11.05	11.8	978	
26/11/2023	27/11/2023 08:00 - 12:00	mFRR Total	675	11.05	11.8	980	Individual bids
26/11/2023	27/11/2023 12:00 - 16:00	mFRR Flex	2	11.35	11.35	2	
26/11/2023	27/11/2023 12:00 - 16:00	mFRR Standard	673	11.06	11.64	965	
26/11/2023	27/11/2023 12:00 - 16:00	mFRR Total	675	11.06	11.64	967	Individual bids
26/11/2023	27/11/2023 16:00 - 20:00	mFRR Flex	2	11.35	11.35	2	
26/11/2023	27/11/2023 16:00 - 20:00	mFRR Standard	673	11.04	11.55	960	
26/11/2023	27/11/2023 16:00 - 20:00	mFRR Total	675	11.04	11.55	962	Individual bids
26/11/2023	27/11/2023 20:00 - 00:00	mFRR Flex	2	8.6	8.6	2	
26/11/2023	27/11/2023 20:00 - 00:00	mFRR Standard	673	8.37	8.7	1043	
26/11/2023	27/11/2023 20:00 - 00:00	mFRR Total	675	8.38	8.7	1045	Individual bids

Changes

- Removal of mFRR Flex line
- Removal of mFRR Standard line
- Individual bids will only be published on OpenData



Next Steps

At the latest on 29/03:

- A detailed document with the changes will be provided
- Test data sets will be released on OpenData

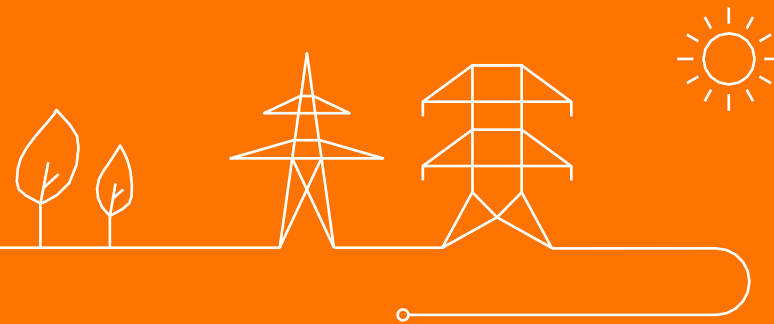
At Go-Live Datasets will start to be filled with live data

In case of further questions on publications please contact your KAM



Publications on ENTSOE Transparency Platform

Laura JACOBS



Summary on Balancing publications for Belgium

- New publications:
 - mFRR IF 3.17 & aFRR IF 3.16 – Net positions, exchanged volumes
 - aFRR IF 3.16 – CBMP for aFRR standard product
 - mFRR IF 3.11 & aFRR IF 3.10 - Fall-backs – available in Outage domain
 - mFRR IF 9.9 & aFRR 9.8 & 9.6 - Changes to bid availability
 - aFRR IF/ mFRR IF 4.3 & 4.4 - Cross border capacity limitations
- Changes in balancing energy publications:
 - 17.1.F – price of activated energy
 - 12.3.E – aggregated energy bids
 - 12.3.B – individual energy bids (mFRR)
- No impact on the content of following publications :
 - 12.3.B – individual energy bids (aFRR)
 - All publications related to capacity balancing market
 - All publications related to Imbalance
 - Financial Balance

The screenshot shows the entsoe Transparency Platform interface. The 'Balancing' menu item is highlighted with a red box and an arrow. Below the navigation bar, there are 'Suggested Data Views' including 'All Data Views', 'Rules on Balancing', 'Terms and Conditions', 'Accepted Offers and Activated Balancing Reserves', 'Volumes of Contracted Balancing Reserves', 'Price of Reserved Balancing Reserves', 'Prices of Activated Balancing Energy', 'Imbalance', and 'Cross-Border Balancing'. A 'Close' button is visible in the top right of the content area.

The main content area is divided into several sections:

- Capacity**
 - [Volumes of Contracted Balancing Reserves \(legacy\)](#)
 - [Price of Reserved Balancing Reserves \(legacy\)](#)
 - [Volumes and Prices of Contracted Reserves](#)
 - [Procured Capacity](#)
 - [FCR Amount and Shares](#)
 - [Sharing of FCR between Synchronous Areas](#)
 - [FRR and RR Capacities and Outlook](#)
- Financial Balance**
 - [Financial Expenses and Income](#)
- Cross-border**
 - [Allocation and use of cross-zonal capacity](#)
 - [Permanent Allocation Limitations](#)
 - [Balancing Border Capacity Limitations](#) (NEW)
 - [Sharing of RR and FRR](#)
 - [Exchanged Reserve Capacity](#)
- Imbalance**
 - [Imbalance Netting](#)
 - [Imbalance](#)
 - [Current Balancing State](#)
- Rules and Reports**
 - [Terms and Conditions](#)
 - [Information on conversion into Standard Products](#)
 - [Approved Methodologies](#)
 - [Algorithm](#)
 - [Common Annual Report](#)
 - [Rules on Balancing](#)
- Energy**
 - [Prices of Activated Balancing Energy](#) (NEW)
 - [CBMPs for aFRR CS](#) (NEW)
 - [Bids](#) (NEW)
 - [Changes to Bid Availability](#) (NEW)
 - [Aggregated Bids](#) (NEW)
 - [Netted and Exchanged Volumes](#) (NEW)
 - [Elastic Demands](#)

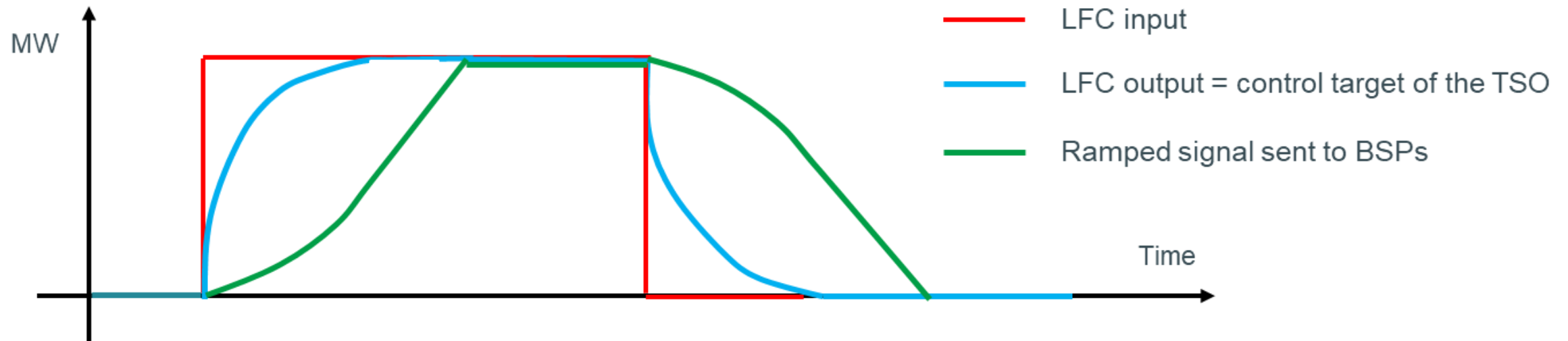
On the right side of the screenshot, there is a date selector set to '21.11.2023' and a chart showing 'Prices' over time from 02:30 to 12:30. The chart is a stacked area chart with multiple colored layers representing different data series.

Aggregated Balancing Energy bids for aFRR (1)

12.3.E – Aggregated Balancing energy bids

Published both for local activations by Elia and for central selection by PICASSO without fallback
15min resolution

- Volume selected by the platform (LFC input in red) - **Central selection by Picasso**
- The volume after the TSO controller corresponds to what the TSO ideally needs for its regulation (LFC output in blue)
- The signal sent to the BSP (Ramped signal sent to BSPs in green) – **Local activation by Elia**



Aggregated Balancing Energy bids for aFRR (2)

12.3.E – Aggregated Balancing energy bids
Published both for local activations by Elia and for
central selection by PICASSO without fallback
15min resolution

- Central selection under Reserve type “aFRR CS”
- Local activation under Reserve type “aFRR LS”
- Today aFRR activations are published by Elia under Reserve type “aFRR”
- “Unavailable” volume published under Reserve type “aFRR”, corresponds to balancing energy bids submitted to the EU Balancing Platform & unavailable for the activation by the EU Balancing Platform*
- “Offered” volume, published under Reserve type “aFRR”, corresponds to the volume available for activation

*If Elia is disconnected from EU Balancing Platform, unavailable volume of firm offered bid will still be published under Reserve type “aFRR”.

Aggregated Bids ?

Aggregated balancing energy bids [GL EB 12.3.E]

Day

30.08.2023

Scheduling Area

Area
Show fullscreen ▼ Export Data ▼
CET (UTC+1) / CEST (UTC+2) ▼

Volumes per Direction, Type of product and Reserve Type

ISP	Reserve Type	Type of Product	Direction	Offered	Activated	Unavailable
				[MW]	[MW]	[MW]
00:00 - 00:15	aFRR	Local	Up	n/e	n/e	n/e
00:00 - 00:15	aFRR	Local	Down	n/e	n/e	n/e
00:00 - 00:15	aFRR	Specific	Up	n/e	n/e	n/e
00:00 - 00:15	aFRR	Specific	Down	n/e	n/e	n/e
00:00 - 00:15	aFRR	Standard	Up	82	1	0
00:00 - 00:15	aFRR	Standard	Down	422	0	0
00:00 - 01:00	aFRR CS	Local	Up	n/e	n/e	n/e
00:00 - 01:00	aFRR CS	Local	Down	n/e	n/e	n/e
00:00 - 01:00	aFRR CS	Specific	Up	n/e	n/e	n/e
00:00 - 01:00	aFRR CS	Specific	Down	n/e	n/e	n/e

Items per page 10 25 50 100

1 2 3 4 5 > >>

For technical reasons, on the Transparency Platform, all balancing energy products different from standard products are published as specific products. The notion of specific product in this case includes both: [1] specific products that are defined, approved and used pursuant to Articles 5(4)(d) and 26(1) of Commission Regulation (EU) 2017/2195 (EBGL); and [2] products that do not comply with the given articles. ENTSO-E and Transmission System Operators make no representations or warranties of any kind, express or implied about a specific product compliance with Article 26(1) of EBGL.

For several areas, the standard and specific products are not defined and therefore may not be published.

Area

- Germany (DE) ▼
- SCAIDE(50Hertz)
- SCAIDE(Amprion)
- SCAIDE(Amprion)-LU
- SCAIDE(TenneT_GER)
- SCAIDE(TransnetBW)
- SCAIDE_DK1_LU
- Greece (GR) ▼
- Hungary (HU) ▼
- Ireland (IE) ▼
- Italy (IT) ▼
- Latvia (LV) ▼
- Lithuania (LT) ▼
- Luxembourg (LU) ▼
- Montenegro (ME) ▼
- Netherlands (NL) ▼
- Norway (NO) ▼

Reserve Type

- aFRR ?
- aFRR CS ?
- aFRR LS ?
- mFRR ?
- mFRR DA ?
- mFRR SA ?

Available as of connection to PICASSO

Aggregated Balancing Energy bids for mFRR (1)

12.3.E – Aggregated Balancing energy bids
Published by MARI with Elia as a fallback
15min resolution

mFRR DA:

- A Direct Activation (DA) is an activation lasting 2 QH
- “Activated” volumes for Direct Activations are published under “mFRR DA” reserve type

mFRR SA:

- A Scheduled Activation (SA) is an activation lasting 1 QH
- “Activated” volumes for Scheduled Activations are published under “mFRR SA” reserve type

Aggregated Bids ?

Aggregated balancing energy bids [GL EB 12.3.E]
Replacing the publication of "Accepted Aggregated Offers" [TR 17.1.D], "Activated Balancing Energy" [TR 17.1.E], "Cross-border Balancing - Volumes of Exchanged Bids and Offers" [TR 17.1.J] and "Cross-border Balancing - Energy Activated" [TR 17.1.J]

Day
26.10.2023

Scheduling Area

Area

- Germany (DE)
 - SCA|DE(50Hertz)
 - SCA|DE(Amprion)
 - SCA|DE(Amprion)-LU
 - SCA|DE(TenneT_GER)
 - SCA|DE(TransnetBW)
 - SCA|DE-LU
 - SCA|DE_DK1_LU
- Greece (GR)
- Hungary (HU)
- Ireland (IE)
- Italy (IT)
- Latvia (LV)
- Lithuania (LT)
- Luxembourg (LU)
- Montenegro (ME)
- Netherlands (NL)
- Norway (NO)

Reserve Type

- aFRR ?
- aFRR_CS ?
- aFRR_LS ?
- mFRR ?
- mFRR_DA ?
- mFRR_SA ?

Show fullscreen Export Data

CET (UTC+1) / CEST (UTC+2)

Volumes per Direction, Type of product and Reserve Type						
ISP	Reserve Type	Type of Product	Direction	Offered	Activated	Unavailable
				[MW]	[MW]	[MW]
00:00 - 00:15	mFRR	Standard	Up	393		0
00:00 - 00:15	mFRR	Standard	Down	106		0
00:00 - 00:15	mFRR DA	Standard	Up		0	
00:00 - 00:15	mFRR DA	Standard	Down		0	
00:00 - 00:15	mFRR SA	Standard	Up		0	
00:00 - 00:15	mFRR SA	Standard	Down		0	
00:15 - 00:30	mFRR	Standard	Up	396		0
00:15 - 00:30	mFRR	Standard	Down	107		0
00:15 - 00:30	mFRR DA	Standard	Up		0	
00:15 - 00:30	mFRR DA	Standard	Down		0	

Items per page: 10 25 50 100

1 2 3 4 5 > >>

For technical reasons, on the Transparency Platform, all balancing energy products different from standard products are published as specific products. The notion of specific product in this case includes both: [1] specific products that are defined, approved and used pursuant to Articles 5(4)(d) and 26(1) of Commission Regulation (EU) 2017/2195 (EBGL); and [2] products that do not comply with the given articles. ENTSO-E and Transmission System Operators make no representations or warranties of any kind, express or implied about a specific product compliance with Article 26(1) of EBGL.

For several areas, the standard and specific products are not defined and therefore may not be published.

Available as of mFRR local go-live

40

Aggregated Balancing Energy bids for mFRR (2)

12.3.E – Aggregated Balancing energy bids Published by MARI with Elia as a fallback 15min resolution

- “Offered” volume corresponds to the volume available for activation: It can be either for “Direct&Scheduled activations” or for “Scheduled activations only”, both are published under “mFRR” reserve type
- “Unavailable” volume, published under “mFRR” reserve type, corresponds to balancing energy bids submitted to the EU Balancing Platform & unavailable for the activation by the EU Balancing Platform*

* If Elia is disconnected from Balancing Platform, unavailable volume of firmed offered bids will still be published.

Aggregated Bids ?

Aggregated balancing energy bids [GL EB 12.3.E]
Replacing the publication of "Accepted Aggregated Offers" [TR 17.1.D], "Activated Balancing Energy" [TR 17.1.E], "Cross-border Balancing - Volumes of Exchanged Bids and Offers" [TR 17.1.J] and "Cross-border Balancing - Energy Activated" [TR 17.1.J]

Day
26.10.2023

Scheduling Area

Area

- Germany (DE)
 - SCA/DE(50Hertz)
 - SCA/DE(Amprion)
 - SCA/DE(Amprion)-LU
 - SCA/DE(TenneT_GER)
 - SCA/DE(TransnetBW)
 - SCA/DE-LU
 - SCA/DE_DK1_LU
- Greece (GR)
- Hungary (HU)
- Ireland (IE)
- Italy (IT)
- Latvia (LV)
- Lithuania (LT)
- Luxembourg (LU)
- Montenegro (ME)
- Netherlands (NL)
- Norway (NO)

Reserve Type

- aFRR ?
- aFRR_CS ?
- aFRR_LS ?
- mFRR ?
- mFRR_DA ?
- mFRR_SA ?

Show fullscreen Export Data

CET (UTC+1) / CEST (UTC+2)

Volumes per Direction, Type of product and Reserve Type						
ISP	Reserve Type	Type of Product	Direction	Offered	Activated	Unavailable
				[MW]	[MW]	[MW]
00:00 - 00:15	mFRR	Standard	Up	393		0
00:00 - 00:15	mFRR	Standard	Down	106		0
00:00 - 00:15	mFRR DA	Standard	Up		0	
00:00 - 00:15	mFRR DA	Standard	Down		0	
00:00 - 00:15	mFRR SA	Standard	Up		0	
00:00 - 00:15	mFRR SA	Standard	Down		0	
00:15 - 00:30	mFRR	Standard	Up	396		0
00:15 - 00:30	mFRR	Standard	Down	107		0
00:15 - 00:30	mFRR DA	Standard	Up		0	
00:15 - 00:30	mFRR DA	Standard	Down		0	

Items per page 10 25 50 100

1 2 3 4 5 > >>

For technical reasons, on the Transparency Platform, all balancing energy products different from standard products are published as specific products. The notion of specific product in this case includes both: [1] specific products that are defined, approved and used pursuant to Articles 5(4)(d) and 26(1) of Commission Regulation (EU) 2017/2195 (EBGL); and [2] products that do not comply with the given articles. ENTSO-E and Transmission System Operators make no representations or warranties of any kind, express or implied about a specific product compliance with Article 26(1) of EBGL.

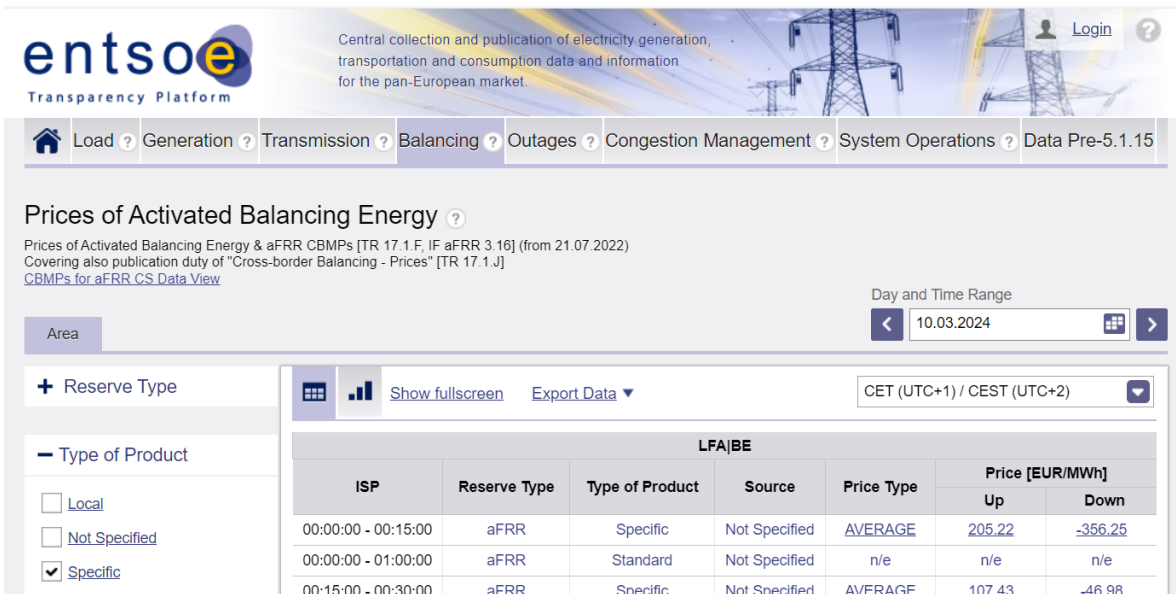
For several areas, the standard and specific products are not defined and therefore may not be published.

Available as of mFRR local go-live

Prices of Activated Balancing Energy for aFRR

17.1.F – Prices of activated energy
Local aggregated activations by TSOs
 Published by Elia
 15min resolution

aFRR IF 3.16 – CBMP for aFRR standard product
Central selection submitted by PICASSO
 Published by PICASSO without fallback
 4sec resolution



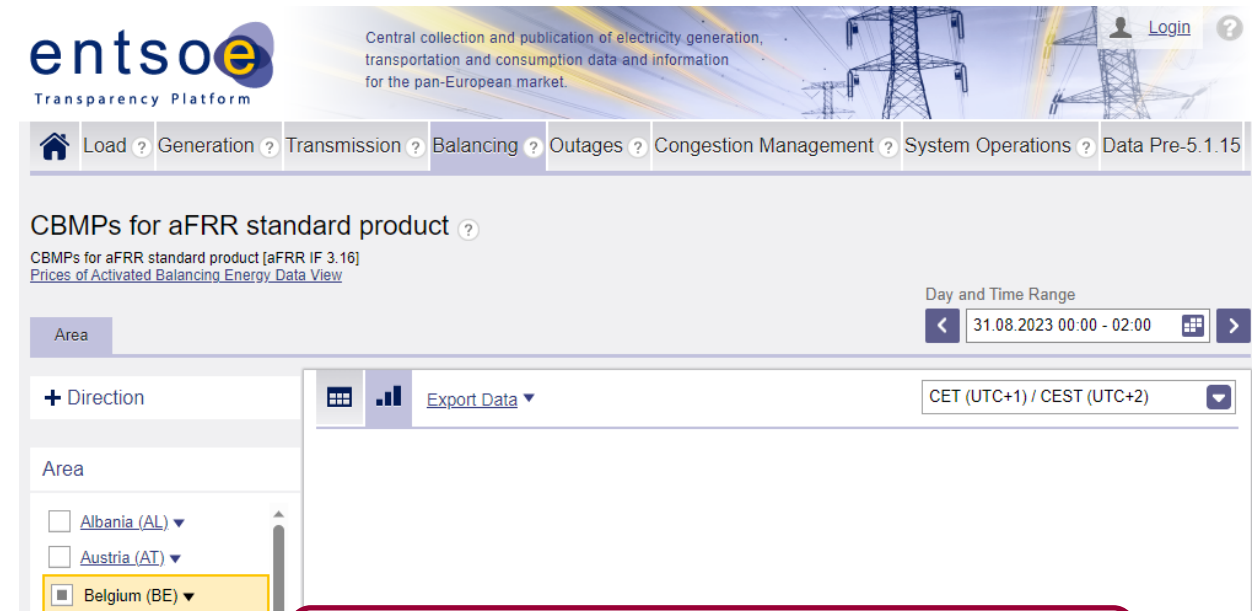
Prices of Activated Balancing Energy & aFRR CBMPs [TR 17.1.F, IF aFRR 3.16] (from 21.07.2022)
 Covering also publication duty of "Cross-border Balancing - Prices" [TR 17.1.J]
[CBMPs for aFRR CS Data View](#)

Day and Time Range: 10.03.2024

Area: LFA|BE

ISP	Reserve Type	Type of Product	Source	Price Type	Price [EUR/MWh]	
					Up	Down
00:00:00 - 00:15:00	aFRR	Specific	Not Specified	AVERAGE	205.22	-356.25
00:00:00 - 01:00:00	aFRR	Standard	Not Specified	n/e	n/e	n/e
00:15:00 - 00:30:00	aFRR	Specific	Not Specified	AVERAGE	107.43	-46.98

Already published



CBMPs for aFRR standard product [aFRR IF 3.16]
[Prices of Activated Balancing Energy Data View](#)

Day and Time Range: 31.08.2023 00:00 - 02:00

Area: Belgium (BE)

Available as of connection to PICASSO

Type of product: from connection to EU Balancing platform, balancing publications will be published under 'standard product' only

Prices of Activated Balancing Energy for mFRR

17.1.F – Prices of activated energy
 Two prices published separately (Direct Activations and Scheduled Activations)
 Published by MARI with Elia as a fallback
 15min resolution

- Prices for Direct activations are published under “mFRR DA” reserve type. The price published is the min/max of all the accepted prices for DA. It’s not necessarily the price paid to a BSP for a DA.
- Prices for Scheduled activations are published under “mFRR SA” reserve type. The price published is the clearing price of the SA.

Home
Load ?
Generation ?
Transmission ?
Balancing ?
Outages ?
Congestion Management ?
System Operations ?
Data Pre-5.1.15

Prices of Activated Balancing Energy ?

Prices of Activated Balancing Energy & aFRR CBMPs [TR 17.1.F, IF aFRR 3.16] (from 21.07.2022)
 Covering also publication duty of "Cross-border Balancing - Prices" [TR 17.1.J]
[CBMPs for aFRR CS Data View](#)

Day and Time Range

< 12.03.2024 >

Area

Reserve Type

- aFRR ?
- aFRR LS ?
- FCR ?
- mFRR ?
- mFRR DA ?
- mFRR SA ?

Show fullscreen
Export Data ▼

CET (UTC+1) / CEST (UTC+2) ▼

SCA DE(50Hertz)						
ISP	Reserve Type	Type of Product	Source	Price Type	Price [EUR/MWh]	
					Up	Down
00:00:00 - 00:15:00	mFRR DA	Standard	Generation			
00:00:00 - 00:15:00	mFRR DA	Standard	Not Specified	AVERAGE		-85.00
00:00:00 - 00:15:00	mFRR SA	Standard	Generation			
00:00:00 - 00:15:00	mFRR SA	Standard	Not Specified			

Available as of local go-live

Individual energy bids for mFRR

12.3.B - individual energy bids for mFRR
Published by MARI with Elia as a fallback

Complexity is added in the publication 12.3.B – Individual Balancing energy bids for mFRR

- **Exclusive bids** are a set of associated bids and only one or none of the bids may be accepted
- **Multipart bids** (i.e., bids part of a parent-child group) are a set of associated bids and if one of them is accepted then all the other ones with a more competitive offer price must also be accepted
For multipart bids, an aggregation of the volumes of all the bids in the multipart group is published with a single volume-weighted average price

Publication already available, complexity will be available as of local go-live

elia group
entsoe
Transparency Platform
Central collection and publication of electricity generation, transportation and consumption data and information for the pan-European market.

Load ? Generation ? Transmission ? Balancing ? Outages ? Congestion Management ? System Operations ? Data Pre-5.1.15

Balancing energy bids ?
Balancing Energy Bids (GL EB 12.3.B&C) (from 21.07.2022)

Day and Time Range
10.11.2023

Scheduling Area

Area

- Belgium (BE) ▾
- SCA|BE
- Bosnia and Herz. (BA)
- Bulgaria (BG) ▾
- Croatia (HR) ▾
- Czech Republic (CZ) ▾
- Denmark (DK) ▾
- Estonia (EE) ▾
- Finland (FI) ▾
- France (FR) ▾
- Georgia (GE) ▾
- Germany (DE) ▾
- Greece (GR) ▾
- Hungary (HU) ▾
- Ireland (IE) ▾
- Italy (IT) ▾
- Latvia (LV) ▾

Reserve Type

- aFRR ?
- mFRR ?
- RR ?

Show fullscreen Export Data ▾

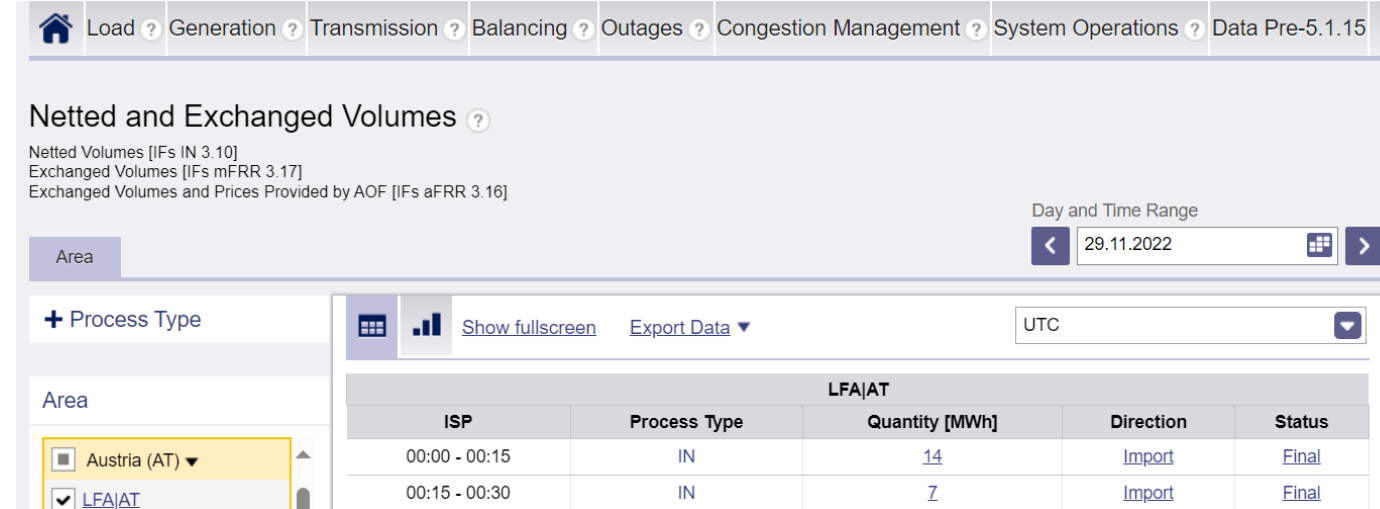
SCA BE						
Bid ID	Delivery Period Start-End	Reserve Type	Direction	Type of Product	Complexity	Status
14	10.11.2023 00:00 - 10.11.2023 04:00 (CET/CEST)	mFRR	Up	Specific	None	None +
24	10.11.2023 00:00 - 10.11.2023 04:00 (CET/CEST)	mFRR	Up	Specific	None	None +
25	10.11.2023 00:00 - 10.11.2023 04:00 (CET/CEST)	mFRR	Up	Specific	None	None +
51	10.11.2023 00:00 - 10.11.2023 04:00 (CET/CEST)	mFRR	Up	Specific	None	None +
52	10.11.2023 00:00 - 10.11.2023 04:00 (CET/CEST)	mFRR	Up	Specific	None	None +
57	10.11.2023 00:00 - 10.11.2023 04:00 (CET/CEST)	mFRR	Up	Specific	None	None +
1	10.11.2023 00:00 - 11.11.2023 00:00 (CET/CEST)	mFRR	Down	Specific	None	None +
2	10.11.2023 00:00 - 11.11.2023 00:00 (CET/CEST)	mFRR	Down	Specific	None	None +
3	10.11.2023 00:00 - 11.11.2023 00:00 (CET/CEST)	mFRR	Down	Specific	None	None +
4	10.11.2023 00:00 - 11.11.2023 00:00 (CET/CEST)	mFRR	Down	Specific	None	None +

Items per page 10 25 50 100

1 2 3 4 5 > >>

New balancing publications for aFRR & mFRR

- mFRR IF 3.17 & aFRR IF 3.16 – **Exchanged volumes** (export or import), for mFRR, it's published separately for DA & SA



Netted and Exchanged Volumes ?

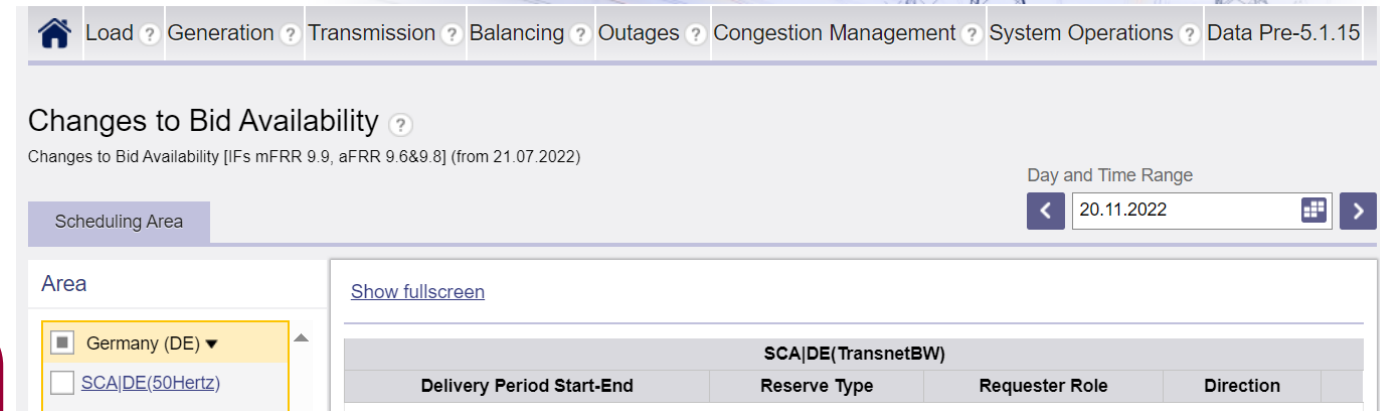
Netted Volumes [IFs IN 3.10]
 Exchanged Volumes [IFs mFRR 3.17]
 Exchanged Volumes and Prices Provided by AOF [IFs aFRR 3.16]

Day and Time Range: 29.11.2022

Area: LFA|AT

LFA AT				
ISP	Process Type	Quantity [MWh]	Direction	Status
00:00 - 00:15	IN	14	Import	Final
00:15 - 00:30	IN	7	Import	Final

- mFRR IF 9.9 & aFRR 9.8 & 9.6 – **Changes to bid unavailability**, for bid submitted to EU Balancing platforms, when changing the bids, the reasons for such change is published



Changes to Bid Availability ?

Changes to Bid Availability [IFs mFRR 9.9, aFRR 9.6&9.8] (from 21.07.2022)

Day and Time Range: 20.11.2022

Scheduling Area: SCA|DE(50Hertz)

SCA DE(TransnetBW)			
Delivery Period Start-End	Reserve Type	Requester Role	Direction

Published by the EU Balancing Platforms with no fallback

Publication will start from the connection to the EU Balancing Platforms

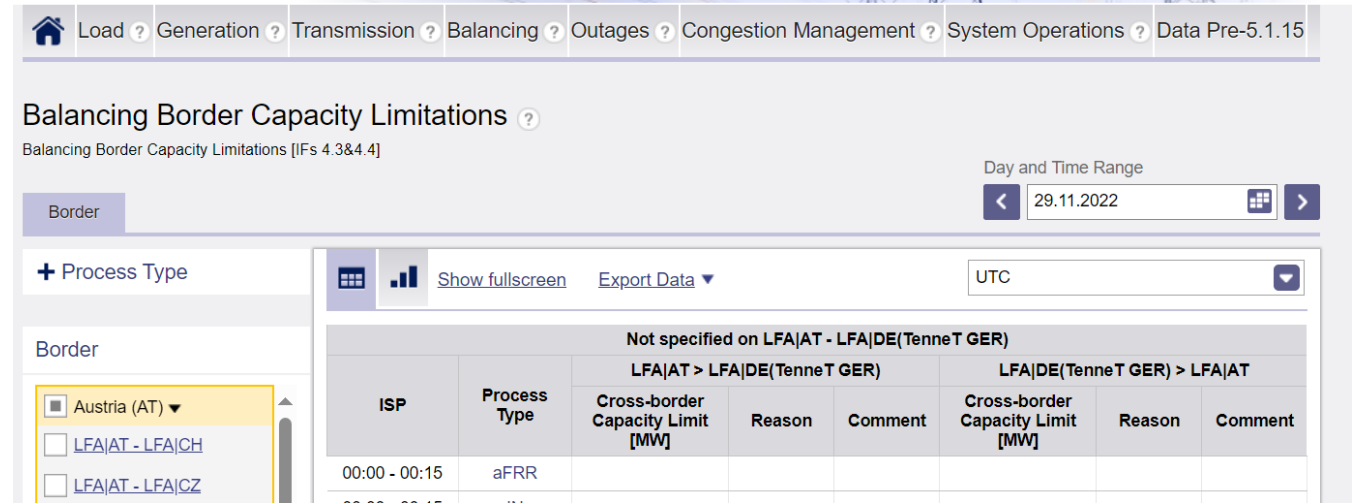
New balancing publications for aFRR & mFRR

- aFRR IF/ mFRR IF 4.3 & 4.4 – **Cross border capacity limitations** for operational security constraints
- mFRR IF 3.11 & aFRR IF 3.10 – **Fallbacks:** publication of the disconnection & reconnection from/to EU Balancing Platforms, of the unavailability of EU Balancing Platforms and of EU Balancing Platforms failure (due to algorithm or IT infrastructure issues)

- The publication is available under the tab “Outages” on ENTSO-E TP

Published by the EU Balancing Platforms with no fallback

Publication will start from the connection to the EU Balancing Platforms

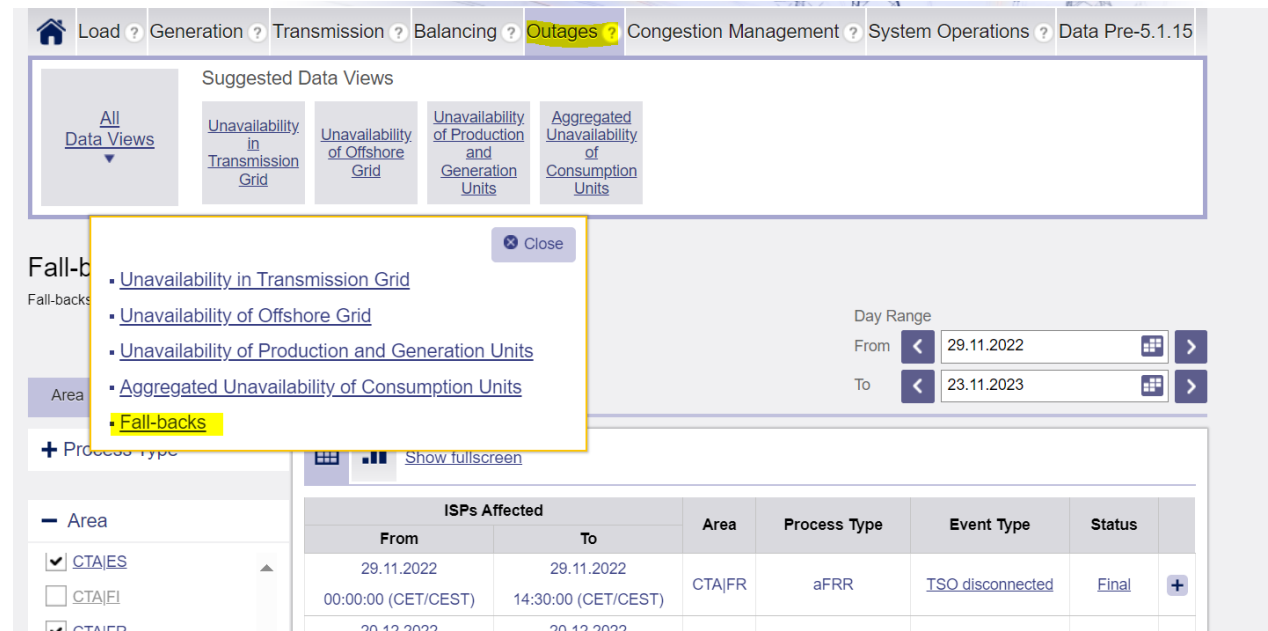


Balancing Border Capacity Limitations [IFs 4.3&4.4]

Day and Time Range: 29.11.2022

Border: Austria (AT)

ISP	Process Type	Not specified on LFA AT - LFA DE(TenneT GER)			LFA AT > LFA DE(TenneT GER)			LFA DE(TenneT GER) > LFA AT		
		Cross-border Capacity Limit [MW]	Reason	Comment	Cross-border Capacity Limit [MW]	Reason	Comment	Cross-border Capacity Limit [MW]	Reason	Comment
00:00 - 00:15	aFRR									



Outages

Suggested Data Views:

- All Data Views
- Unavailability in Transmission Grid
- Unavailability of Offshore Grid
- Unavailability of Production and Generation Units
- Aggregated Unavailability of Consumption Units
- Fall-backs**

Day Range: From 29.11.2022 To 23.11.2023

ISPs Affected		Area	Process Type	Event Type	Status
From	To				
29.11.2022 00:00:00 (CET/CEST)	29.11.2022 14:30:00 (CET/CEST)	CTA FR	aFRR	TSO disconnected	Final

Balancing publications with no changes on the content

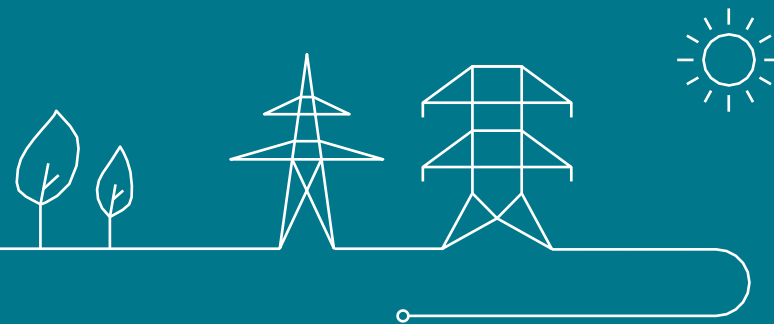
- 12.3.B – individual **energy bids** for aFRR
 - Published by Balancing Platforms with Elia as a fallback
- All publications related to **Imbalance Price**
 - Evolution of the imbalance price formula will be integrated in the data published
- All publications related to **capacity balancing market**
- 17.1.1 – **Financial Expenses and Income** for Balancing

Available Cross border capacity Intraday

- Available intraday Cross border capacity at the last closed gate
 - on Elia.be : [Capacité Intraday \(elia.be\)](#)
 - On OpenData : [Intraday available capacity at last closed gate - by border — Elia Open Data Portal](#)
- Offered Intraday Transfer Capacity for implicit allocations on ENTSOE TP : [Data View \(entsoe.eu\)](#)

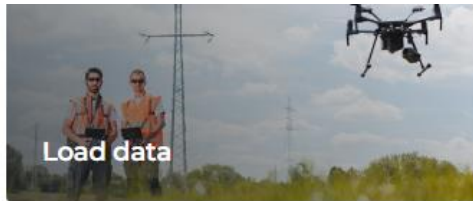
iCAROS Publication Changes

Raphaël DUFOUR



Publications impacted by ICAROS

- No change on data published on ENTSOE Transparency Platform
- Changes on the publications on the Elia website: [Grid data \(elia.be\)](https://www.elia.be)



Load data

Careful load monitoring is required to ensure continuity of supply, taking into account production and network constraints.

[Read more](#)



Power generation data

As production is becoming more and more diversified, a good knowledge of it is necessary to ensure an efficient and qualitative supply of energy.

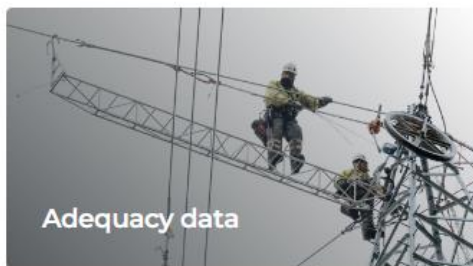
[Read more](#)



Transmission data

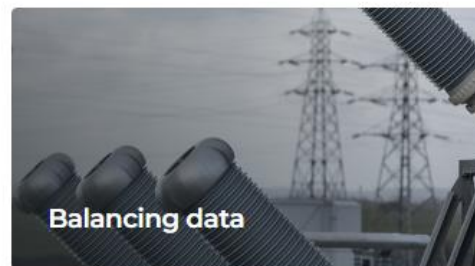
Efficient use of our grid and our interconnection capacity, in accordance with the applicable allocation mechanisms, is vital for ensuring security of supply.

[Read more](#)



Adequacy data

To ensure the adequacy of the Belgian system, Elia cooperates on the implementation and operation of the adequacy mechanisms put in place by the Belgian government.



Balancing data

When an imbalance between generation and consumption occurs on its grid, Elia can use a wide range of measures to restore the balance.



Congestion Management data

When grid components are overloaded or at risk of becoming overloaded in the event of an incident, Elia can activate congestion management measures on its transmission grid to bring the situation back into the applicable safety standards.

Power generation data

[Power generation \(elia.be\)](https://www.elia.be)

- No change (addition/removal) of type of published data related to iCAROS go-live
 - Elia however proposes to remove the "Available Generation Capacity Forecast" publication as it does not give a complete view due to voluntary provision of information by market parties and it is not in the scope of ENTSOE publications nor iCAROS information exchange
- **Update of the terminology and description of published data** (on Elia website and Open Data)
 - In line with the **regulated documents** in framework of iCAROS: T&C SA, T&C OPA and Rules for Coordination and Congestion management
- Update of **fuel types for publication** (on Elia website and Open Data)
- Systematic **reference to Open Data** on Elia website to access to the data



'Total generation' refers to all generating facilities in Belgium, at all voltage levels, and includes the actual decentralised generation for which Elia does not have measurements.

Only wind and solar generation data are available at present.

[Solar-PV power generation data](#)

[Wind-power generation data](#)



'Contracted generation' refers to the power generated by all units linked to Elia by a specific contract setting out their rights and obligations in connection with the injection of power onto the grid.

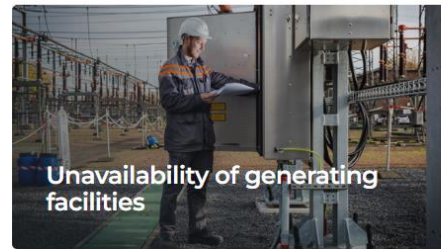
Information about contracted generation is published in accordance with the Elia-FEBEG transparency agreement and Elia's legal obligations with regard to transparency.

[Energy generated by contracted power units](#)

[Generation schedules](#)

~~[Available generation capacity forecast](#)~~

[Generating facilities](#)



The European Transparency Regulation requires that generators share information about the current or scheduled unavailability of a generation unit as soon as they have it. This information may also be regarded as inside information under the REMIT Regulation.

[Planned and unplanned outages affecting generation units](#)



Updated names for published data:

- Power generated by contractual technical units
- Day-ahead schedules of contracted technical units
- Contracted technical units data
- Planned and forced outages of contracted technical units

New fuel type publications

- The **fuel type list** has been updated in the SA & OPA contracts to better reflect the actual production park
- Publication of data **aggregates some fuel types** for better visualization

Fuel type from SA/OPA contract	
BG	Biogas
BL	Biofuel (Liquid)
BS	Biomass (Solid)
DI	Diesel
EL	Electricity
FO	Fuel Oil
GA	Gasoline
KE	Kerosine
NG	Natural Gas
NUC	Nuclear
OG	Industrial Process Off-Gas
PH	Process Heat
SO	Solar
WA	Water
WI	Wind
WR	Waste for Incineration



Fuel Type for Publication	Fuel Type(s) from SA/OPA Contract
Nuclear	NUC
Natural Gas	NG
Other Fossil Fuels	DI + FO + GA + KE
Biofuels	BS + BG + BL
Water	WA (pump storage and run-of-river)
Solar	SO
Wind Offshore	WI (filter technical facility of type "offshore wind park")
Wind Onshore	WI (filter technical facility of type "offshore")
Other	WR + EL + OG + PH

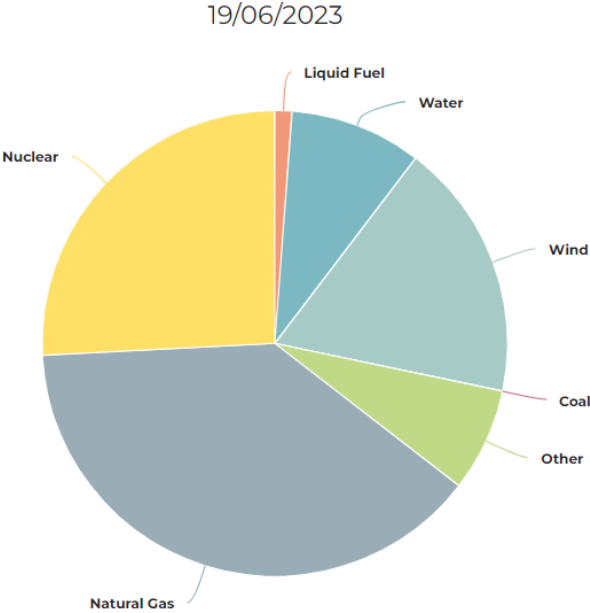


Example – Generating facilities

[Generating facilities \(elia.be\)](http://elia.be)

As is

Actual installed power aggregated by fuel type

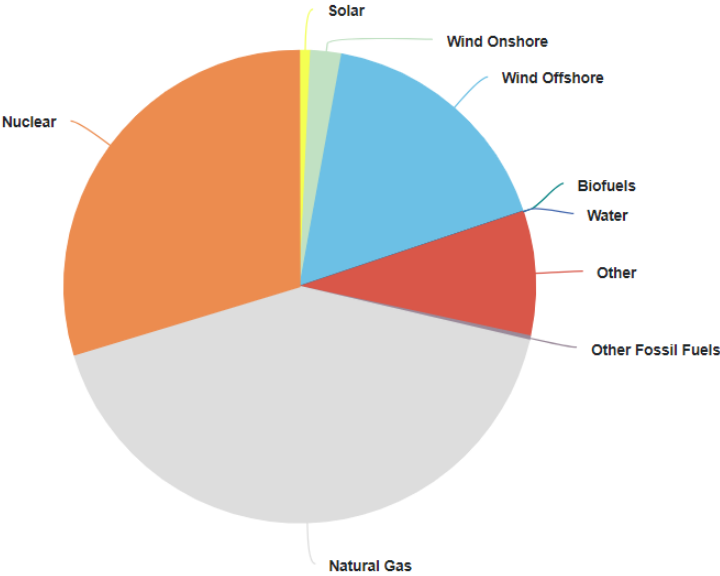


To be

19/06/2023



19/06/2023

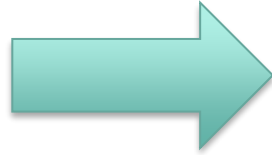


- New split of fuel type for publications
- Date picker to be added

Mapping between the new fuel type publications and ENTSOE publications

ENTSOE Fuel Types

B01	Biomass
B02	Fossil Brown coal/Lignite
B03	Fossil Coal-derived gas
B04	Fossil Gas
B05	Fossil Hard coal
B06	Fossil Oil
B07	Fossil Oil shale
B08	Fossil Peat
B09	Geothermal
B10	Hydro Pumped Storage
B11	Hydro Run-of-river and pondage
B12	Hydro Water Reservoir
B13	Marine
B14	Nuclear
B15	Other renewable
B16	Solar
B17	Waste
B18	Wind Offshore
B19	Wind Onshore
B20	Other



Fuel Type Publication	Fuel Type ENTSOE
Nuclear	B14
Natural Gas	B04
Other Fossil Fuels	B03+B06
Biofuels	B01+B15
Water	B10+B11
Solar	B16
Wind Offshore	B18
Wind Onshore	B19
Other	B17+B20



Planned and unplanned outages affecting generation units

[Planned and unplanned outages \(elia.be\)](https://elia.be)

- All received information of planned or forced outages of contracted technical units will be published **independently of the Pmax**
- **Fuel type will be removed from the publication** to avoid confusion with ENTSOE publication

Planned and unplanned outages affecting generation units

This page provides an overview of planned and unplanned outages of generation units with a nominal power greater than 100 MW.

The tables below detail the unit name, the type of fuel used, the unit's power before and after the planned/unplanned outage and the date and time when the outage started. When the end date of the outage report is reached, the information is archived. The availability of units is monitored through the publication of available generation capacities.

Unplanned outages

Unit	Fuel	Pmax Available (MW)	Pmax Available after outage (MW)	Start Outage	(estimated) End Outage	StartTS	EndTS	Last Update
COO 1 T	WA	158	0	13/11/2023 00:00	12/04/2024 00:00	13/11/2023 00:00	12/04/2024 00:00	14/11/2023 1
PLATE-TAILLE 4 T	WA	36	0	15/02/2024 09:20	31/03/2024 23:59	15/02/2024 09:20	31/03/2024 23:59	19/02/2024
BEERSE TJ	LF	32	0	22/02/2024 10:30	01/04/2024 16:00	22/02/2024 10:30	01/04/2024 16:00	22/02/2024
CIERREUX TJ	LF	18	0	23/02/2024 12:32	28/02/2024 23:59	23/02/2024 12:32	28/02/2024 23:59	23/02/2024

Legend

- Unplanned outages
- Planned outage

Useful links

Open Data
Click here to access to access all grid data published by Elia. The data can be easily explored, downloaded in standard file formats and accessed via API's for use by other applications.

Elia.Open.Data.License

Planned outages

Unit	Fuel	Pmax Available (MW)	Pmax Available after outage (MW)	Start Outage	(estimated) End Outage	StartTS	EndTS	Last Update
RODENHUIZE 4	Other	268	0	11/10/2023 17:37	17/04/2024 08:00	11/10/2023 17:37	17/04/2024 08:00	25/01/2024

Contact

Congestion management

[Congestion management \(elia.be\)](https://www.elia.be)

Congestion management

This section provides an overview of the congestion management actions performed by Elia, either for its own needs or to support a neighboring TSO

Commission Regulation (EU) n° 543/2013 on submission and publication of data in electricity markets defines the concepts of Redispatching and Countertrading as follows :

- "Redispatching" : Measure activated by one or several system operators by altering the generation and/or load pattern in order to change physical flows in the transmission system and relieve a physical congestion. Further distinction can be made between:
 - Internal Redispatching : All redispatching bids are performed in the control area where the congestion is located.
 - Cross-Border Redispatching : The redispatching bids are performed in different control areas.
- "Countertrading" : Cross zonal exchange initiated by system operators between two bidding zones to relieve physical congestion.

High level overview of the Channel Redispatching / Countertrading Actions by Elia

In accordance with the Channel CCR methodology for Coordinated Redispatching and Countertrading which requires that each Channel TSO should publish on their respective website a high-level overview of the RD and CT Action that could be activated to restore the balance of their grid after a redispatching/countertrading on a Channel Interconnector (Nemo Link in Elia's case), you will find this overview in [this document](#).

Activations

This section lists the congestion management activations performed by Elia during the ongoing and the previous month.

Costs

This section lists the costs due to congestion management activations performed by Elia during the ongoing and the previous month.

Red Zones

Each day Elia determines the "Red Zones" as part of the management of congestion risks for the Belgian grid

Improvement of the quality of input data for congestion management

On December 9, 2021, CREG issued decision (B)658E/73 on the targets to be achieved by Elia in 2022 in the framework of the system balance as referred to in Article 27 of the tariff methodology. One of the incentives fixed in this decision is "Improvement of the quality of input data for congestion management". The description indicates that the incentive primarily includes a report on the analysis of the most significant deviations between predictions and reality and an examination of possible short- and long-term solutions and secondly, includes a recommendation and proposal for implementation of concrete solutions in the form of a roadmap for the future.

Useful links

[Congestion Management Incentive 2022 - Final report](#)
PDF - 3.1 MB

Modification not related to iCAROS

The final report can be downloaded here. The objective of this report is to give an overview of the current modelling practices (Individual and Common Grid Model) and to show transparency on the actual quality of the input data for congestion management. The report also covers a root-cause analysis of deviations in the input data (different forecasts f.e. wind, solar, load,...) and an implementation roadmap of a series of improvements.

Quarterly Congestion Management Report

As proposed in response to the incentive on "Improvement of transparency with regards to the detection and management of Congestion" defined in the CREG decision (B)658E/52 of 28 June 2018, Elia publishes a quarterly report on Congestion Management covering a period of three months. This report includes:

- Information on the quality of the following forecasts used as operational input data for the creation of the Individual Grid Models (IGM)
- Information on the quality of output data
- Information about the timing, power, location, and purpose for activations of Costly Remedial Actions by Elia.

File name	Last update
Quarterly_congestion_management_report_2020_Q1.pdf	15/05/2020 17:24
Quarterly_congestion_management_report_2020_Q2.pdf	17/08/2020 14:36
Quarterly_congestion_management_report_2020_Q3.pdf	16/11/2020 17:59
Quarterly_congestion_management_report_2020_Q4.pdf	19/02/2021 12:35
Quarterly_congestion_management_report_2021_Q1.pdf	19/05/2021 18:14
Quarterly_congestion_management_report_2021_Q2.pdf	23/08/2021 13:44
Quarterly_congestion_management_report_2021_Q3.pdf	03/01/2022 15:16
Quarterly_congestion_management_report_2021_Q4.pdf	03/03/2022 11:31
Quarterly_congestion_management_report_2022_Q1.pdf	16/08/2022 11:47
Quarterly_congestion_management_report_2022_Q2.pdf	16/08/2022 11:34
Quarterly_congestion_management_report_2022_Q3.pdf	15/11/2022 15:55
Quarterly_congestion_management_report_2023_Q2.pdf	24/08/2023 13:32

Updates following iCAROS go-live

Contact

Congestion management
Energy Scheduling Office
dngriaccess@elia.be

Red Zones → CRI

[Red Zones \(elia.be\)](http://elia.be)

- iCAROS design introduces the **Congestion Risk Indicator (CRI)** that replaces the Red Zones
- “Red Zones” webpage and Open Data information will be adapted according to the **new terminology and concepts** introduced in iCAROS design and in the Rules for Coordination and Congestion Management
- **Yearly report on CRI levels** will be published on this webpage

Red Zones

Each day Elia determines the “Red Zones” as part of the management of congestion risks for the Belgian grid.

Below tables indicate the level of congestion risks in the electrical zones

29/01/2024

Last update time: 28/01/2024 20:15

Incremental red zones

Time	380		Hainaut East		Hainaut West		Langerbrugge East		Langerbrugge West		Liège		Merksem		Ruien		Schaerbeek / Brussels		Stalen	
	Risk severity	Cap (MW)	Risk severity	Cap (MW)	Risk severity	Cap (MW)	Risk severity	Cap (MW)	Risk severity	Cap (MW)	Risk severity	Cap (MW)	Risk severity	Cap (MW)	Risk severity	Cap (MW)	Risk severity	Cap (MW)	Risk severity	Cap (MW)
00:00 - 01:00	○		○		○		○		○		○		○		○		○		○	
01:00 - 02:00	○		○		○		○		○		○		○		○		○		○	
02:00 - 03:00	○		○		○		○		○		○		○		○		○		○	
03:00 - 04:00	○		○		○		○		○		○		○		○		○		○	
04:00 - 05:00	○		○		○		○		○		○		○		○		○		○	
05:00 - 06:00	○		○		○		○		○		○		○		○		○		○	
06:00 - 07:00	○		○		○		○		○		○		○		○		○		○	
07:00 -	○		○		○		○		○		○		○		○		○		○	

Legend

- Incremental red zone
- Decremental red zone
- Risk severity
- Cap (MW)

Useful links

Open Data

Click here to access to access all grid data published by Elia. The data can be easily explored, downloaded in standard file formats and accessed via API's for use by other applications.

Contact

Updated Legend

- CRI in upward direction
- CRI in downward direction
- CRI levels
- Zonal Active Power Cap



Activations of redispatching & countertrading

[Activations \(elia.be\)](https://www.elia.be)

- Crossborder redispatching & countertrading activations will be split into local activations and import/export with other TSO for clarity

Activations

This section lists the congestion management activations performed by Elia during the ongoing and the previous month. To access older data, please consult the data download section

Internal redispatching

Internal Redispatching Activations from 20/05/2023 to 19/06/2023						
Start Date/Time	End Date/Time	Activation (MWh)	Action	Reason	Overloaded Element	
▶ 22/05/2023 19:15	22/05/2023 21:00	177,80	Decrease	Load flow overload	BRUGG - EEKLN 150.241	▲
▶ 22/05/2023 19:15	22/05/2023 21:00	177,80	Increase	Load flow overload	BRUGG - EEKLN 150.241	
▶ 22/05/2023 18:00	22/05/2023 19:00	100,30	Decrease	Load flow overload	BRUGG - EEKLN 150.241	
▶ 22/05/2023 18:00	22/05/2023 19:00	100,30	Increase	Load flow overload	BRUGG - EEKLN 150.241	▼

Elia_Open_Data.License

Cross-border redispatching

Cross-Border Redispatching Activations from 20/05/2023 to 19/06/2023							
Start Date/Time	End Date/Time	Activation (MWh)	In Area	Out Area	Reason	Overloaded Element	
▶ 20/12/2021 12:00	20/12/2021 14:00	800,00	NL	BE	Load flow overload	VAN EYCK (B) - MAASBACHT (NL) 380.2B	▼

Elia_Open_Data.License

Countertrading

Countertrading Activations from 20/05/2023 to 19/06/2023							
Start Date/Time	End Date/Time	Activation (MWh)	In Area	Out Area	Reason	Overloaded Element	
▶ 15/01/2022 22:30	15/01/2022 23:00	27,50	BE	NL	Load flow overload	DOEL - MERCATOR 380.5A	▲
▶ 15/01/2022 20:00	15/01/2022 23:00	1.800,00	BE	FR	Load flow overload	AVELGEM (B) - AVELIN (FR) 380.80	
▶ 15/01/2022 20:00	15/01/2022 23:30	12,50	BE	NL	Load flow overload	DOEL - MERCATOR 380.5A	▼

Internal redispatching

Internal Redispatching Activations from 26/11/2021 to 25/01/2022						
Start Date/Time	End Date/Time	Activation (MWh)	Action	Reason	Overloaded Element	
▶ 26/11/2021 20:00	26/11/2021 23:00	592,00	Decrease	Load flow overload	ACHENE - GRAMME 380.10	▲
▶ 26/11/2021 19:30	26/11/2021 23:00	701,30	Increase	Load flow overload	ACHENE - GRAMME 380.10	▼

Elia Open Data License

Cross-border redispatching

Import/export with other TSO

Cross-Border Redispatching Activations from 26/11/2021 to 25/01/2022							
Start Date/Time	End Date/Time	Activation (MWh)	In Area	Out Area	Reason	Overloaded Element	
▶ 20/12/2021 12:00	20/12/2021 14:00	800,00	NL	BE	Load flow overload	VAN EYCK (B) - MAASBACHT (NL) 380.2B	▼



Local activation

Internal Redispatching Activations from 26/11/2021 to 25/01/2022						
Start Date/Time	End Date/Time	Activation (MWh)	Action	Reason	Overloaded Element	
▶ 26/11/2021 20:00	26/11/2021 23:00	592,00	Decrease	Load flow overload	ACHENE - GRAMME 380.10	▲
▶ 26/11/2021 19:30	26/11/2021 23:00	701,30	Increase	Load flow overload	ACHENE - GRAMME 380.10	▼



Countertrading

Import/export with other TSO

Countertrading Activations from 26/11/2021 to 25/01/2022							
Start Date/Time	End Date/Time	Activation (MWh)	In Area	Out Area	Reason	Overloaded Element	
▶ 15/01/2022 22:30	15/01/2022 23:00	27,50	BE	NL	Load flow overload	DOEL - MERCATOR 380.5A	▲
▶ 15/01/2022 20:00	15/01/2022 23:00	1.800,00	BE	FR	Load flow overload	AVELGEM (B) - AVELIN (FR) 380.80	
▶ 15/01/2022 20:00	15/01/2022 23:30	12,50	BE	NL	Load flow overload	DOEL - MERCATOR 380.5A	▼

Local activation

Internal Redispatching Activations from 26/11/2021 to 25/01/2022						
Start Date/Time	End Date/Time	Activation (MWh)	Action	Reason	Overloaded Element	
▶ 26/11/2021 20:00	26/11/2021 23:00	592,00	Decrease	Load flow overload	ACHENE - GRAMME 380.10	▲
▶ 26/11/2021 19:30	26/11/2021 23:00	701,30	Increase	Load flow overload	ACHENE - GRAMME 380.10	▼



Thank you.

